

- 61. The process of claim 60, further comprising drying the deposited material to remove said solvent.--
- 62. The process of claim 60 wherein said organic material is a luminescent polymer.--
- 63. The process of claim 60 wherein said material includes polyvinylcarbazol film.--
- 64. The process of claim 60 wherein said solvent is chloroform.--
- 65. The process of claim 60 wherein said material includes light emitting dyes.--
- 66. The process of claim 65 wherein said light emitting dyes include coumarin and nile red.--
- 67. The process of claim 66 wherein said coumarin is coumarin 6.--
- 68. The process of claim 66 wherein said coumarin is coumarin 47.--
- 69. The process of claim 66 wherein said coumarin is coumarin 6 and coumarin 47.--
- 70. The process of claim 60 wherein said organic material is a mixture of polymers and other organic molecules.--
- 71. A process for making organic light emitting diodes comprising the steps of:
depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and
evaporating the solvent, said organic material remaining on the substrate.--
- 72. The process of claim 71 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--
- 73. The process of claim 72 further including the step of metallizing said ink-jet printed substrates.--

--74. The process of claim 73 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--75. The process of claim 74 wherein said top metal contacts are deposited through a shadow mask.--

--76. The process of claim 71 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--77. The process of claim 74 wherein said top metal contacts are deposited in a pattern.--

--78. The process of claim 76 wherein said bottom metal contacts are deposited in a pattern.--

--79. The process of claim 71 further wherein said organic material includes light emitting dyes.--

--80. The process of claim 79 further including the step of depositing top contacts on said organic material by ink jet printing.--

--81. The process of claim 80 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

--82. A process of forming thin film field effect transistors comprising the steps of:
forming a gate electrode on a substrate;
forming a gate insulator over said gate electrode;
forming a polymer semiconducting layer on said insulator by ink-jet printing;
and
forming source and drain contacts on said semiconducting layer.--

--83. The process of claim 82 wherein said gate insulator is formed by ink-jet printing, and the semiconducting layer by other techniques.--

--84. The process of claim 82 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--

--85. The process of claim 83 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--

--86. The process of claim 82 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--87. The process of claim 83 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--88. The process of claim 84 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--89. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of:

depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, whereby said organic material remains on the substrate.--

--90. The process of claim 89, further comprising drying the deposited material to remove said solvent.--

--91. The process of claim 89 wherein said organic material is semiconducting.--

--92. The process of claim 89 wherein said organic material is a luminescent polymer.--

--93. The process of claim 89 wherein said solvent is chloroform.--

--94. The process of claim 89 wherein said material includes light emitting dyes.--

--95. The process of claim 94 wherein said light emitting dyes include coumarin and nile red.--

- 96. The process of claim 95 wherein said coumarin is coumarin 6.--
- 97. The process of claim 95 wherein said coumarin is coumarin 47.--
- 98. The process of claim 95 wherein said coumarin is coumarin 6 and coumarin 47.--
- 99. The process of claim 89 wherein said organic material is a mixture of polymers and other organic molecules.--
- 100. A process for making organic light emitting diodes comprising the steps of:
depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and
evaporating the solvent, said organic material remaining on the substrate.--
- 101. The process of claim 100 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--
- 102. The process of claim 101 further including the step of metallizing said ink-jet printed substrates.--
- 103. The process of claim 102 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--
- 104. The process of claim 103 wherein said top metal contacts are deposited through a shadow mask.--
- 105. The process of claim 100 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--
- 106. The process of claim 103 wherein said top metal contacts are deposited in a pattern.--
- 107. The process of claim 105 wherein said bottom metal contacts are deposited in a pattern.--